





|     |     |              |                                 |
|-----|-----|--------------|---------------------------------|
| (2) | 47  | HISTORY      | ; Detailed Current Edit History |
| (3) | 62  | DECLARATIONS |                                 |
| (4) | 90  | MTHSDINT     | Double to Double truncation     |
| (5) | 133 | MTHSDINT_R4  | JSB entry point                 |

```
0000 1 .TITLE MTHSDINT - FLOATING TRUNCATION
0000 2 .IDENT /1-005/ ; File: MTHDINT.MAR Edit: JBS1005
0000 3
0000 4
0000 5 *****
0000 6 *
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0000 24 *
0000 25 *
0000 26 *****
0000 27
0000 28
0000 29 FACILITY: MATH LIBRARY
0000 30 ++
0000 31 ABSTRACT:
0000 32 This module contains routine MTHSDINT:
0000 33 Return truncated double-precision argument.
0000 34
0000 35 VERSION: 0
0000 36
0000 37 HISTORY:
0000 38
0000 39 AUTHOR:
0000 40 Jonathan M. Taylor, 30-Jul-77: Version 0
0000 41
0000 42 MODIFIED BY:
0000 43
0000 44
0000 45
```



MTHSDINT  
1-005

- FLOATING TRUNCATION  
HISTORY ; Detailed Current Edit History

K 6

16-SEP-1984 01:17:35 VAX/VMS Macro V04-00  
6-SEP-1984 11:22:12 [MTHRTL.SRC]MTHDINT.MAR;1

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```
0000 47      .SBTTL HISTORY      ; Detailed Current Edit History
0000 48
0000 49
0000 50 : Edit History for Version 0 of MTHSDINT
0000 51 :
0000 52 : 0-3 - Remove MTH$FLAG_JACKET. TNH 5-July-78
0000 53 : 1-001 - Update version number and copyright notice. JBS 16-NOV-78
0000 54 : 1-002 - Add "" to the PSECT directive. JBS 22-DEC-78
0000 55 : 1-003 - Add a JSB entry point. JBS 16-AUG-1979
0000 56 : 1-004 - Fix MTHSDINT_R3 so that it disables IV. Add MTHSDINT_R4
0000 57 : that does the same. SBL 26-Sept-1979
0000 58 : 1-005 - Remove MTHSDINT_R3; all callers have converted to _R4.
0000 59 : JBS 20-DEC-1979
0000 60 :--
```

```

0000 62      .SBTTL  DECLARATIONS
0000 63
0000 64 :
0000 65 : INCLUDE FILES:
0000 66 :
0000 67 :     NONE
0000 68 :
0000 69 : EXTERNAL SYMBOLS:
0000 70 :
0000 71 :     NONE
0000 72 :
0000 73 : MACROS:
0000 74 :
0000 75 :     $PSLDEF                      ; PSL macros
0000 76 :
0000 77 : PSECT DECLARATIONS:
0000 78 :     .PSECT  _MTH$CODE          PIC, SHR, LONG, EXE, NOWRT
0000 79 :
0000 80 :
0000 81 : EQUATED SYMBOLS:
0000 82 :
0000 83 :     NONE
0000 84 :
0000 85 : OWN STORAGE:
0000 86 :
0000 87 :     NONE
0000 88 :

```

```
0000 90 .SBTTL MTHSDINT Double to Double truncation
0000 91
0000 92 :++
0000 93 : FUNCTIONAL DESCRIPTION:
0000 94 :
0000 95 : Returns the argument with all zeroes to the right of the decimal
0000 96 : point.
0000 97 :
0000 98 : CALLING SEQUENCE:
0000 99 :
0000 100 : Truncation.wd.v = MTHSDINT (arg.rd.r)
0000 101 :
0000 102 : INPUT PARAMETERS:
0000 103 :
0000 104 : The one argument is a double-precision floating-point value
0000 105 : and is call-by-reference.
0000 106 :
0000 107 : IMPLICIT INPUTS:
0000 108 :
0000 109 : NONE
0000 110 :
0000 111 : OUTPUT PARAMETERS:
0000 112 :
0000 113 : NONE
0000 114 :
0000 115 : IMPLICIT OUTPUTS:
0000 116 :
0000 117 : NONE
0000 118 :
0000 119 : COMPLETION CODES:
0000 120 :
0000 121 : NONE
0000 122 :
0000 123 : SIDE EFFECTS:
0000 124 :
0000 125 : Reserved Operand exception can occur.
0000 126 :
0000 127 :--
50 50 08 00 04 BC 0000 0000 128 .ENTRY MTHSDINT, ^M<>
50 50 04 BC 50 74 0002 129 EMODD @4(AP), #0, #1, R0, R0 ; R0/R1 = fraction_part(arg)
04 000E 130 SUBD3 R0, @4(AP), R0 ; R0/R1 = integer_part(arg)
04 000E 131 RET
```

```
000F 133 .SBTTL MTH$DINT_R4 JSB entry point
000F 134
000F 135 :++
000F 136 : FUNCTIONAL DESCRIPTION:
000F 137 :
000F 138 : Returns the argument with all zeroes to the right of the decimal
000F 139 : point.
000F 140 :
000F 141 : CALLING SEQUENCE:
000F 142 :
000F 143 : Truncation.wd.v = JSB MTH$DINT_R4 (arg.rd.v)
000F 144 :
000F 145 : INPUT PARAMETERS:
000F 146 :
000F 147 : The one argument is a double-precision floating-point value
000F 148 : and is call-by-reference.
000F 149 :
000F 150 : IMPLICIT INPUTS:
000F 151 :
000F 152 : NONE
000F 153 :
000F 154 : OUTPUT PARAMETERS:
000F 155 :
000F 156 : NONE
000F 157 :
000F 158 : IMPLICIT OUTPUTS:
000F 159 :
000F 160 : NONE
000F 161 :
000F 162 : COMPLETION CODES:
000F 163 :
000F 164 : NONE
000F 165 :
000F 166 : SIDE EFFECTS:
000F 167 :
000F 168 : Reserved Operand exception can occur.
000F 169 :
000F 170 :--
000F 171 :
000F 172 :
000F 173 MTH$DINT R4::
000F 174 MOVPSL R4
0011 175 BICPSW #PSL$M_IV
0013 176 EMOOD R0, #0, #1, R2, R2
0019 177 SUBD3 R2, R0, R0
001D 178 BICW #^C<PSL$M_IV>, R4
0022 179 BISPSW R4
0024 180 RSB
0025 181
0025 182 .END
```

```
: R0/R1 = argument
: Save the PSL
: Disable IV
: R2/R3 = fraction_part(arg)
: R0/R1 = integer_part(arg)
: Clear all but PSL$V_IV bit
: Restore IV if set
: Return to caller
```

```
52 52 08 00 54 DC
50 50 20 B9
54 54 50 74
54 FFDF 8F AA
54 8B
05
```



MTH\$DINT  
Symbol table

- FLOATING TRUNCATION

B 7

16-SEP-1984 01:17:35 VAX/VMS Macro V04-00  
6-SEP-1984 11:22:12 [MTHRTL.SRC]MTHDINT.MAR;1

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MTH\$DINT 00000000 RG 02  
MTH\$DINT\_R4 0000000F RG 02  
PSL\$M\_IV = 00000020

-----  
! Psect synopsis !  
-----

| PSECT name | Allocation      | PSECT No. | Attributes  |
|------------|-----------------|-----------|---|
| . ABS .    | 00000000 ( 0.)  | 00 ( 0.)  | NOPIC USR CON ABS LCL NOSHR NOEXE NORD NOWRT NOVEC BYTE |
| \$AB\$\$   | 00000000 ( 0.)  | 01 ( 1.)  | NOPIC USR CON ABS LCL NOSHR EXE RD WRT NOVEC BYTE       |
| _MTH\$CODE | 00000025 ( 37.) | 02 ( 2.)  | PIC USR CON REL LCL SHR EXE RD NOWRT NOVEC LONG         |

-----  
! Performance indicators !  
-----

| Phase                  | Page faults | CPU Time    | Elapsed Time |
|------------------------|-------------|-------------|--------------|
| Initialization         | 35          | 00:00:00.09 | 00:00:00.96  |
| Command processing     | 135         | 00:00:00.47 | 00:00:02.37  |
| Pass 1                 | 113         | 00:00:01.06 | 00:00:04.62  |
| Symbol table sort      | 0           | 00:00:00.03 | 00:00:00.05  |
| Pass 2                 | 46          | 00:00:00.44 | 00:00:01.77  |
| Symbol table output    | 2           | 00:00:00.01 | 00:00:00.01  |
| Psect synopsis output  | 3           | 00:00:00.03 | 00:00:00.06  |
| Cross-reference output | 0           | 00:00:00.00 | 00:00:00.00  |
| Assembler run totals   | 336         | 00:00:02.14 | 00:00:09.85  |

The working set limit was 900 pages.  
4031 bytes (8 pages) of virtual memory were used to buffer the intermediate code.  
There were 10 pages of symbol table space allocated to hold 41 non-local and 0 local symbols.  
182 source lines were read in Pass 1, producing 13 object records in Pass 2.  
8 pages of virtual memory were used to define 7 macros.

-----  
! Macro library statistics !  
-----

| Macro library name                  | Macros defined |
|-------------------------------------|----------------|
| _\$255\$DUA28:[SYSLIB]STARLET.MLB;2 | 4              |

98 GETS were required to define 4 macros.

There were no errors, warnings or information messages.

MACRO/ENABLE=SUPPRESSION/DISABLE=(GLOBAL,TRACEBACK)/LIS=LIS\$:MTHDINT/OBJ=OBJ\$:MTHDINT MSRC\$:MTHDINT/UPDATE=(ENH\$:MTHDINT)



AH-BT13A-SE  
VAX/VMS V4.0

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